

## CLAIMS

1     1.     A method to reduce the power consumed by a data storage device comprising:  
2             providing a data storage device including:  
3                 a rotary actuator assembly;  
4                 a voice coil motor connected with said rotary actuator assembly;  
5                 wherein the voice coil motor is electrically connected with two terminals;  
6             applying a first voltage potential across the two terminals of the voice coil motor to cause  
7     the rotary actuator assembly to move;  
8             applying a second voltage potential across the two terminals of the voice coil motor;  
9             repeatedly switching between applying the first voltage potential and the second voltage  
10    potential across two terminals of the voice coil motor such that an approximately constant current is  
11    maintained across two terminals of the voice coil motor.

1     2.     The method of claim 1, wherein the switching is at a rate greater than 50kHz.

1     3.     A processor having instructions for:  
2             applying a first voltage potential across two terminals of a voice coil motor to cause a rotary  
3     actuator assembly to move;  
4             applying a second voltage potential across two terminals of the voice coil motor;

5 repeatedly switching between applying the first voltage potential and the second voltage  
6 potential across two terminals of the voice coil motor such that an approximately constant current is  
7 maintained across two terminals of the voice coil motor;  
8 receiving a command to perform an operation on the at least one disk; and  
9 maintaining the first voltage potential across two terminals of the voice coil motor.

1 4. A system for storing and retrieving information, comprising:

2 a rotatable means for storing data  
3 a positioning means for positioning a head to store or retrieve data on said rotatable means;  
4 a means for moving said positioning means;  
5 a means for applying a voltage to said means for moving such that said positioning means  
6 moves at a design rate; and  
7 a means for selectively switching between a first voltage and a second voltage such that an  
8 approximately constant current is delivered to said means for moving.

1 5. The system of claim 4, including a means for communicating with said rotatable means, wherein the  
2 means for communicating with said rotatable means is removed from communication with said rotatable  
3 means when switching between said first voltage and said second voltage.

1       6.       A system for storing and retrieving information, comprising:  
2               a spindle;  
3               at least one disk connected with the spindle;  
4               a head in communication with each of said at least one disk;  
5               a rotary actuator assembly connected with said head;  
6               a voice coil motor having at least two terminals connected with the rotary actuator assembly  
7       for moving said head; and  
8               a power driver electrically connected with said voice coil motor;  
9               wherein a first voltage potential is applied across two terminals of said voice coil motor  
10      such that said head moves at a design speed;  
11              wherein when said head is removed from communication with said at least one disk, said  
12      power driver switches between applying said first voltage potential and a second voltage potential across  
13      two terminals such that a constant current is delivered to said voice coil motor.

1       7.       The method of claim 6, wherein the switching is at a rate greater than 50kHz.